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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,193	06/01/2006	Tetsuya Murakami	1560-0459PUS1	3562
2292 7590 11/15/2010 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER				
KNUTSON, JACOB D				
ART UNIT		PAPER NUMBER		
3611				
NOTIFICATION DATE		DELIVERY MODE		
11/15/2010		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

### Office Action Summary

**Application No.**

10/581,193

**Applicant(s)**

MURAKAMI ET AL.

**Examiner**

JACOB KNUTSON

**Art Unit**

3611

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 September 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/22)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

Receipt is acknowledged of a request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(c) and a submission, filed on 9/10/10.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

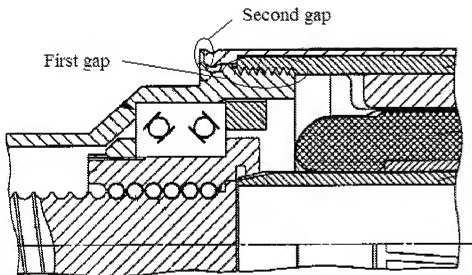
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims **1 – 7 and 9 are** rejected under 35 U.S.C. 103(a) as being unpatentable over **Nagamatsu et al. (US 2004/0206199 A1)** in view of **Kodaira (US 6,427,799 B1)**.

For claim 1, Nagamatsu et al. discloses a vehicle steering apparatus comprising: a housing 2 for supporting coaxially a steering shaft 1 and a rotating cylinder 51, said rotating cylinder being provided with a screw mechanism 50 52 and 53 constructed between said rotating cylinder and said steering shaft for moving in an axial direction for the purpose of steering and being rotated by a transmission from a steering motor, said housing being constructed in a separated form having of first and second housings 21 and 22, said first and second housings being fit to each other by a spigot-joint fitting on an outer side of a retaining part of a thrust bearing 54 for thrust-supporting said rotating cylinder, wherein a first gap is provided in a part that constitutes a part of the spigot-joint fitting part of said first and second housings and that is

located radially outward from on an outer side of a fixing nut 56 screwed into said retaining part in order to apply a tightening force on said thrust bearing from one side, and wherein said first gap that constitutes a part overlaps, in an axial direction, with a screwing region between said retaining part and said fixing nut screwed into said retaining part, and [wherein said fixing nut is in direct contact with said thrust bearing, and within said first gap, an increase in an outer diameter of the retaining part caused when the fixing nut is tightened is absorbed] as stated in page 3, paragraph [0035], the prior art has all the elements and performs the tightening of the fixing nut to cause the increase in an outer diameter.

Nagamatsu et al. does not disclose a second gap on a part of a spigot-joint fitting being smaller than the first gap. However, Kodaira discloses a first gap 38 being larger than a second gap on a part of a spigot-joint fitting part of two housings A and B where said first gap is not provided as best shown in Fig. 3. The second gap being miniscule as it may be, there still exists a space or gap in between the housings.



At the time of the invention, it would have been obvious to a person of ordinary skill in the art to alternatively use the housing and groove of Kodaira with the steering apparatus of Nagamatsu et al. to allow for an adhesive to be applied which allows for a securer fit.

For claim 2, Nagamatsu et al. modified as above discloses the vehicle steering apparatus wherein said screw mechanism is a ball screw mechanism 50 52 and 53 and said ball screw mechanism is constructed such that a screw groove 50 formed in an outer periphery of said steering shaft is engaged with a screw groove 52 formed in an inner periphery of said rotating cylinder via a large number of balls 53.

For claim 3, Nagamatsu et al. modified as above discloses the vehicle steering apparatus further comprising an escape stopping ring 57, said escape stopping ring being in contact with an end face of said fixing nut from an opposite side of said thrust bearing as shown in Fig. 3.

For claim 4, Nagamatsu et al. modified as above discloses the vehicle steering apparatus wherein said thrust bearing is a twin angular contact ball bearing having a common outer race tightened by said fixing nut.

For claim 5, Nagamatsu et al. modified as above discloses the vehicle steering apparatus wherein said thrust bearing is a shield bearing provided with a shield member on both sides of rolling elements.

For claim 6, Nagamatsu et al. modified as above discloses the vehicle steering apparatus wherein said rotating cylinder has, in an outer periphery, a gear wheel that engages with a pinion of an output shaft of said steering motor.

For claim 7, Nagamatsu et al. modified as above discloses the vehicle steering apparatus wherein said gear wheel has resin gear teeth.

For claim 9, Nagamatsu et al. modified as above discloses the vehicle steering apparatus wherein said gap is located directly above the screwing region between said retaining part and said fixing nut screwed into said retaining part.

### ***Response to Arguments***

Applicant's arguments filed 9/10/10 have been fully considered but they are not persuasive. The applicant argues "said first gap does not substantially overlap, in an axial direction, with a screwing region between said retaining part and said fixing nut secured into said retaining part." However, Kodaira disclose the preload nut is screwed into an inner face (of first housing 21) on an opening side. Kodaira is disclosed to show a first gap larger than a second gap as shown in Fig. 3. The first gap has been changed and shown in Drawing 1 above.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Knutson whose telephone number is 571-270-5576. The examiner can normally be reached on Monday to Friday, 12:30 PM - 9:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leslie Morris can be reached on 571-272-6952. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J.D.K/

November 3, 2010

/LESLEY D MORRIS/  
Supervisory Patent Examiner, Art Unit 3611